

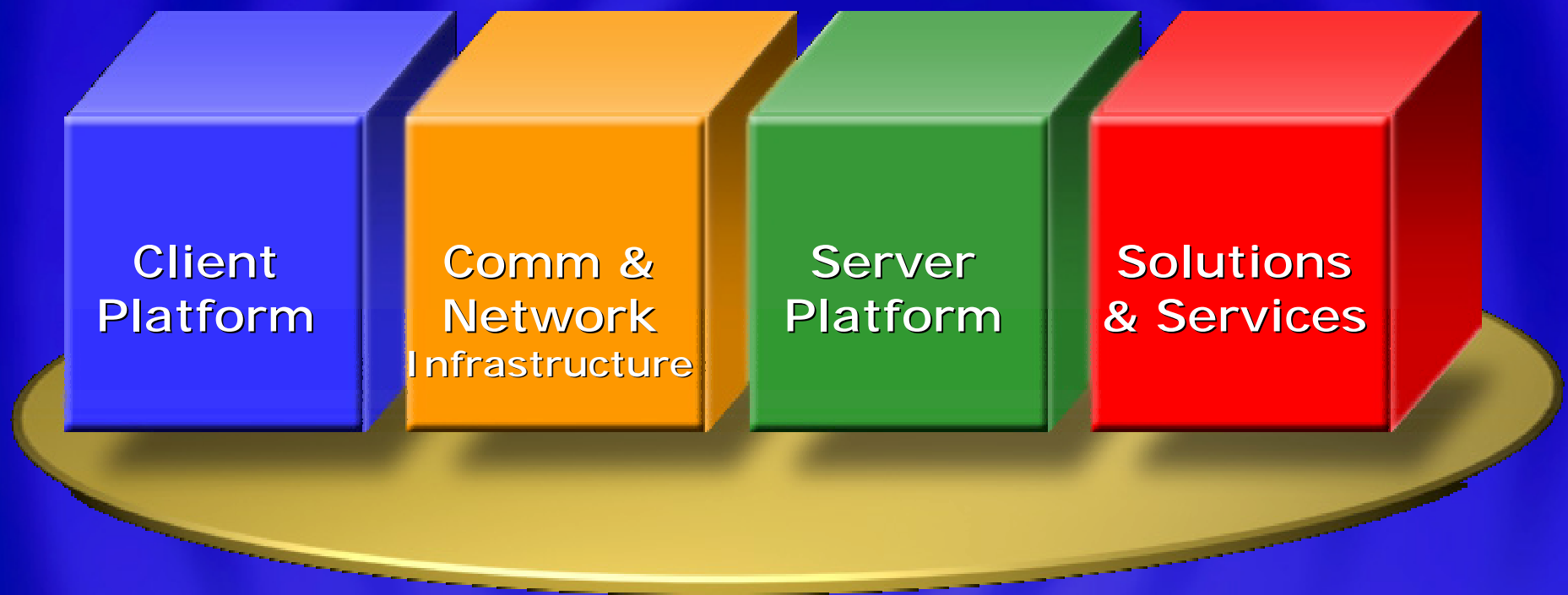
# Flash Products Group Intel Corporation

*1st Billion in 12 years, 2nd Billion in 2 years*

***Curt Nichols  
Warburg Dillon Read  
June 6, 2000***



# Building Blocks for the Internet Economy



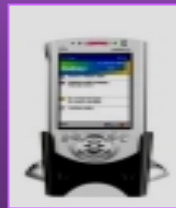
***Wired & Wireless***

# Wireless Communications and Computing Group

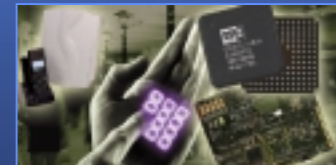
## Flash Memory



## Handheld Computing



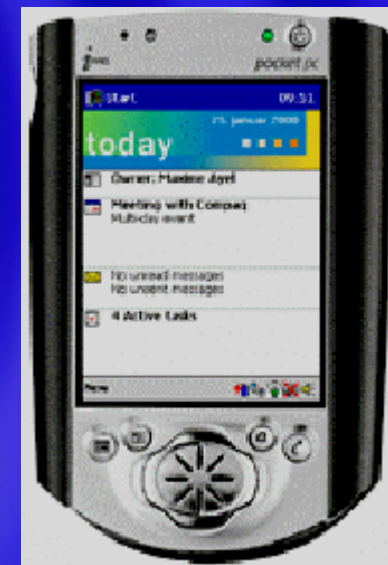
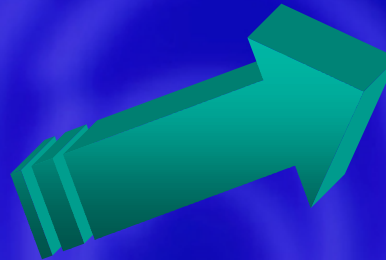
## Cellular Components



# Flash Ideal for Handhelds

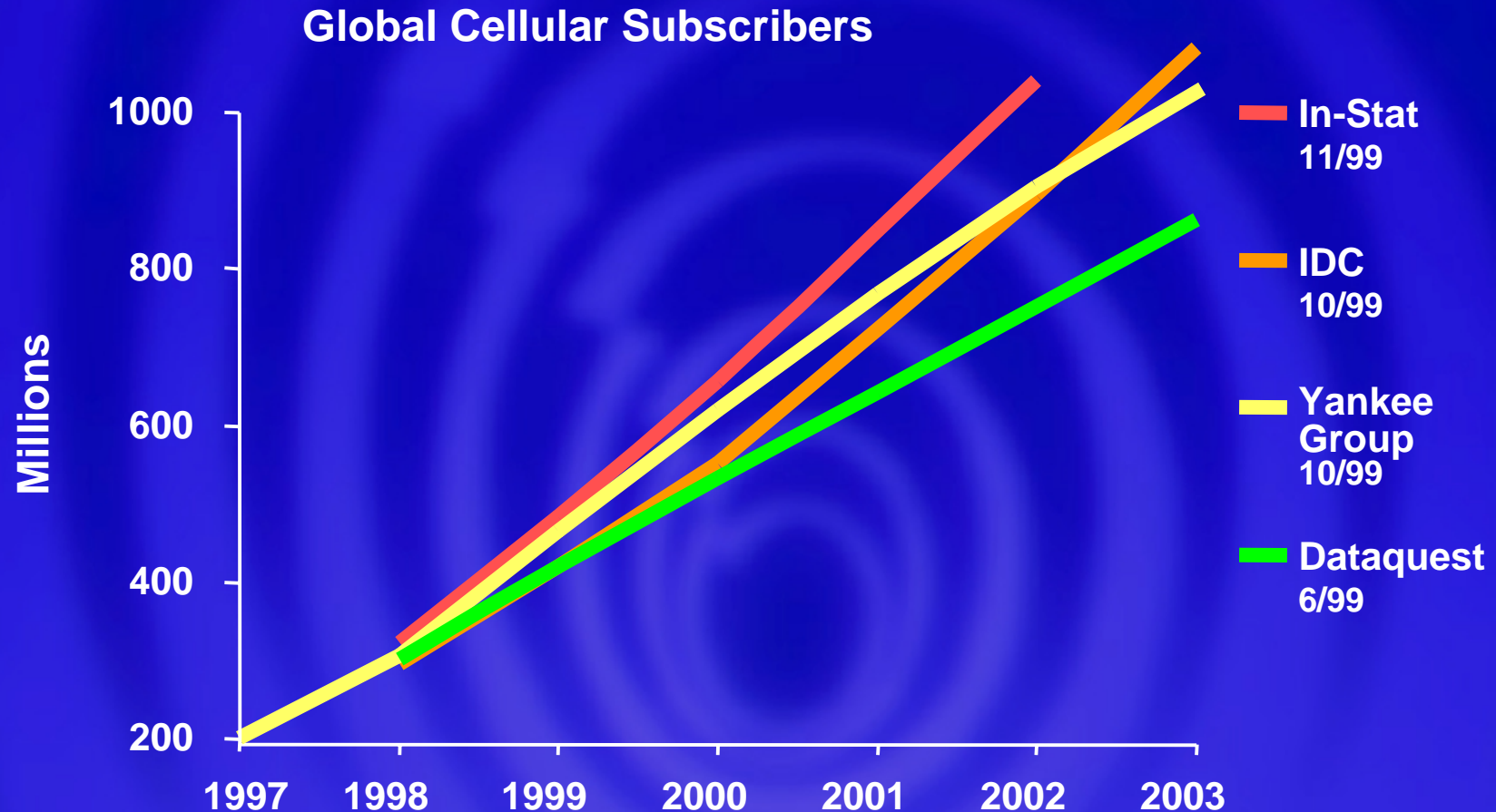
Flash stores everything...

Operating system  
Applications  
Data files



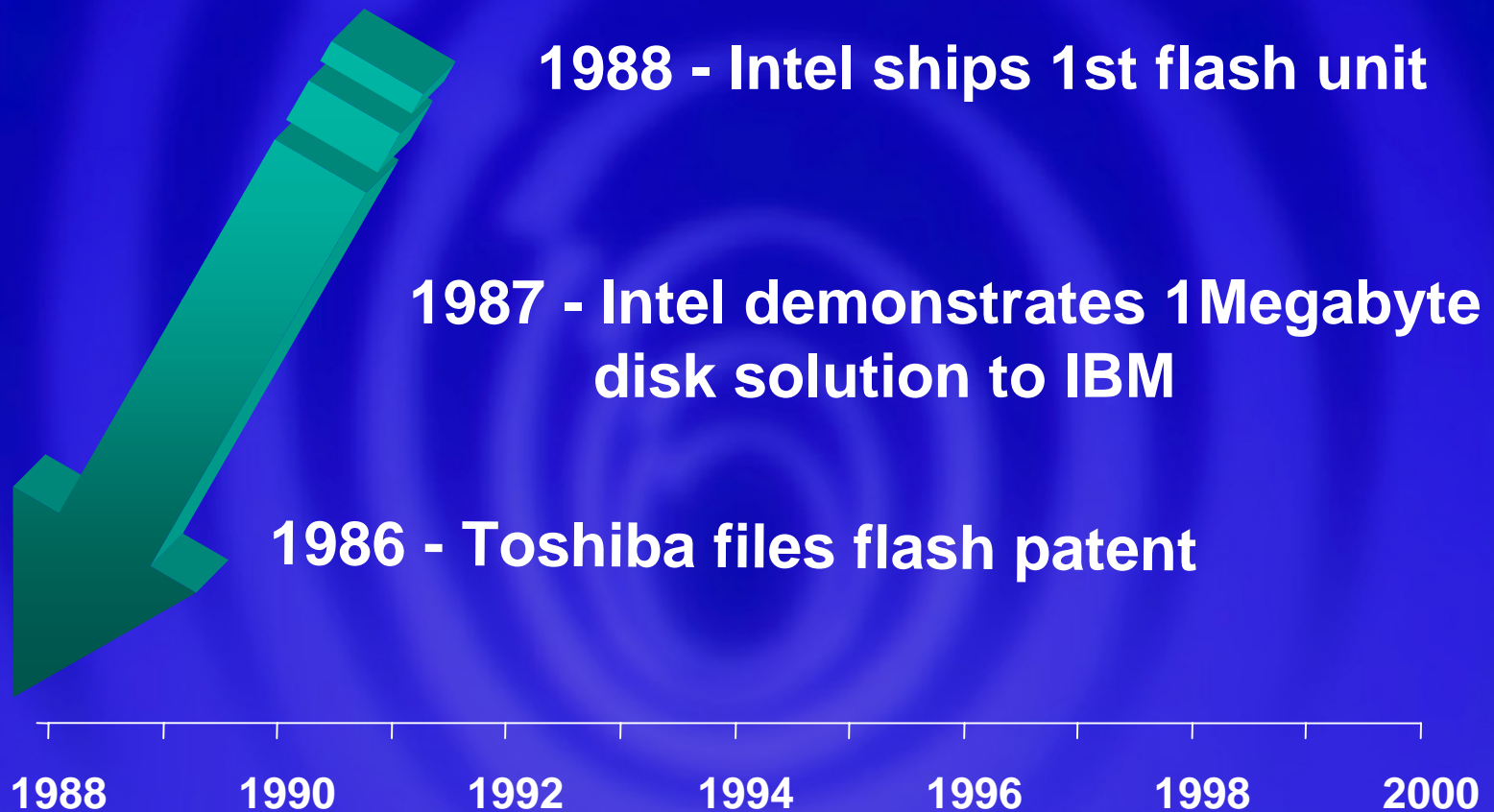


# Cellular Sales Exploding



***1 Billion Subscribers by 2003***

# The Beginning of Flash



# Early Adopters of Flash

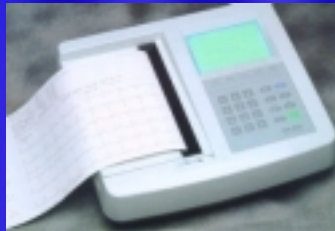


Games

Telecom/Network



Fish Finders



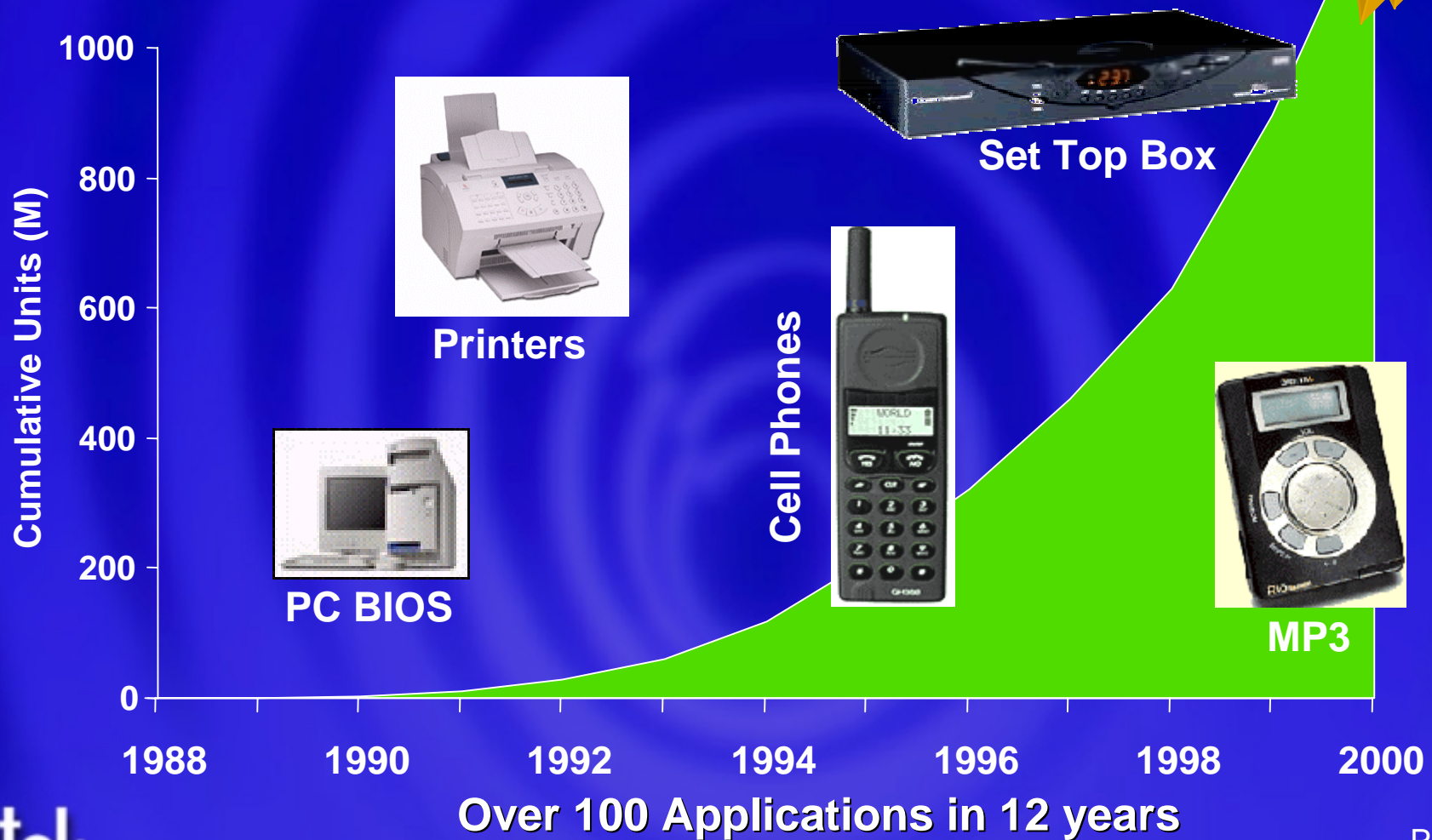
Medical



Aviation

Time

# Road to 1 Billion Units





# More Features, More Flash



Data Rates (Kbps)

**3G Multi-media**

Audio/video e-mail

**2.5G Wireless Web**

Stocks, news, e-commerce

**2G Digital**

Better roaming, frequent #s, voice recognition

1996

1998

2000

2002



New features require more storage

# Flash Demand Exploding

**Plan on tight market for flash memory chips to continue through 2000.** -Jan 13, 2000

**“...[flash memory] Leadtimes have stretched to 20 weeks, and undercapacity conditions will last well into 2000”** -Feb 10, 2000

**Tremendous demand for cell phones has boosted market and ushered in era of allocation**

...Pam Ward, product manager for flash at Fujitsu Microelectronics Inc., San Jose. "We foresee [flash shortages] continuing through the rest of the year and probably into the first half of 2001."... -April 10, 2000

**Part shortages put purchasers in hot seat**

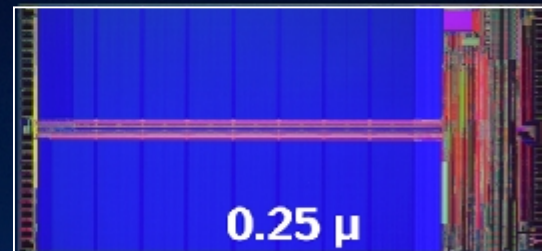
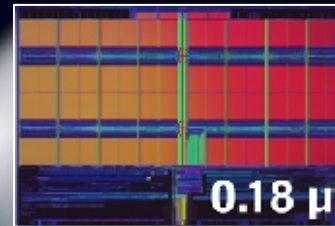
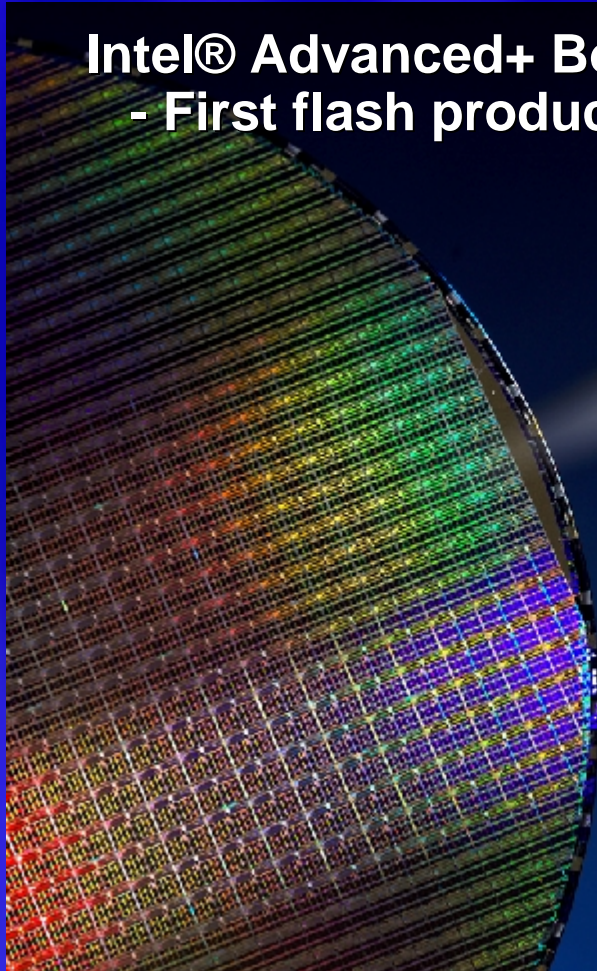
The booming wireless market is the ... reason flash memory [is] on the most-wanted list. The shortage has cost cell-phone manufacturers a ton of money in lost sales...

-January 31, 2000



# 2X the Output with 0.18μ

**Intel® Advanced+ Boot Block Memory**  
- First flash product on 0.18μ



**32Mb die photos**



# Intel® 0.18μ Flash Network

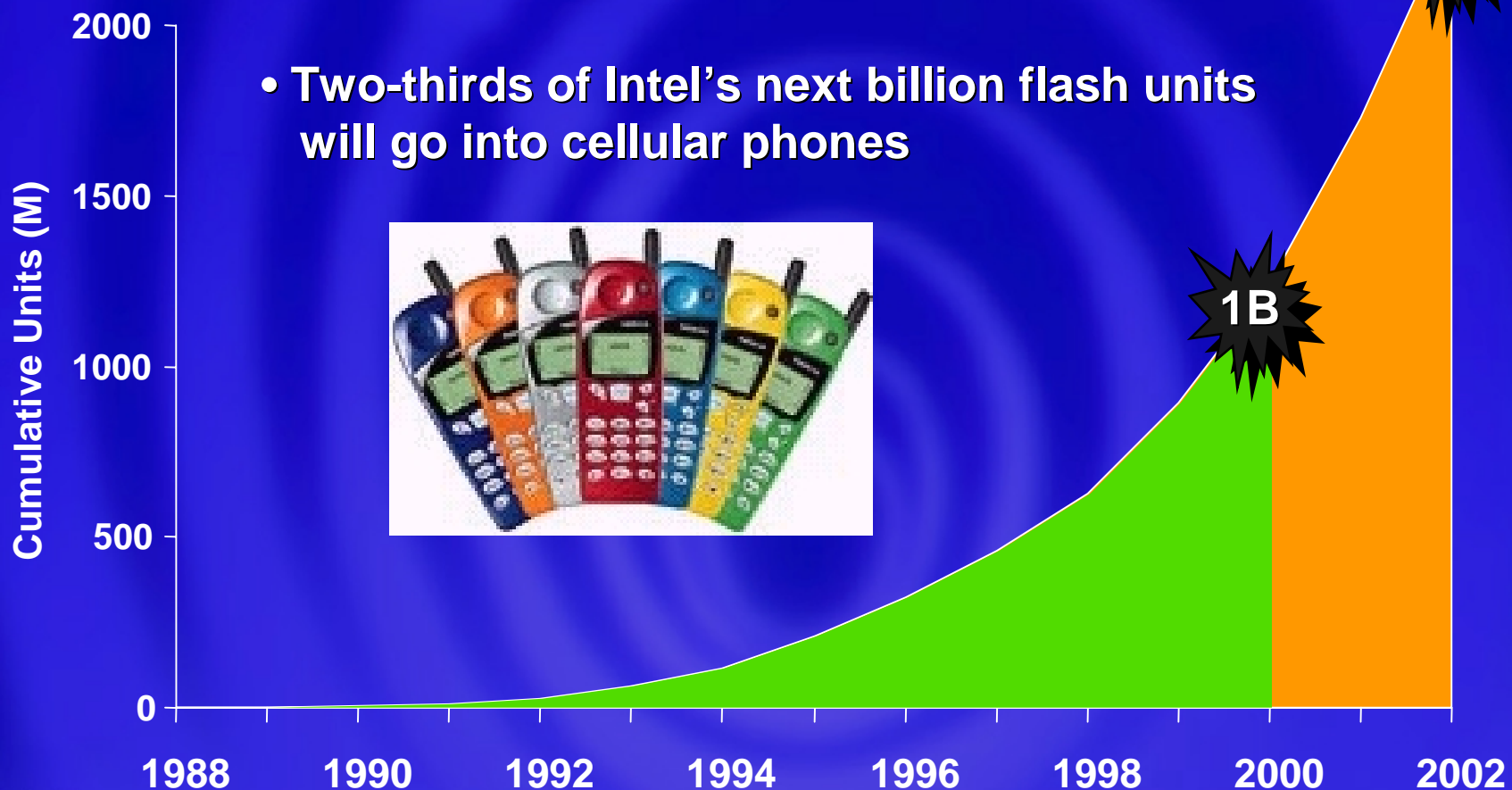
“Copy Exactly”





# 2nd Billion in 2 years

- Two-thirds of Intel's next billion flash units will go into cellular phones



# Intel Flash Summary

- Intel has shipped 1 Billion flash units
  - Over 100 applications in 12 years
- Flash supply impacting OEM sales
  - Intel investing billions on 0.18μ capacity
- 2nd Billion units in 2 years
  - Two-thirds going into cellular phones